Remarks

Claims 1-8 and 10-21 are pending. Claims 1, 17, and 19 have been amended. Claims 20 and 21 are newly added. No new matter has been added. Entry of the amendments is respectfully requested.

Each of claims 1, 17, and 19 now requires the dopant to have a "complex visible wavelength absorption spectrum including multiple identifiable absorption features," as supported by the description, for example, at page 5, lines 12-14, page 7, lines 16-19, and page 10 11-15. Lead has been deleted from the elements listed in claims 17 and 19.

Claim 17 was rejected as anticipated by U.S. patent 6,048,920 (Ziolo). Applicant disagrees. Ziolo teaches a ferric oxide product providing a black toner or pigment (col. 1, lines 43-48, col. 5, lines 4-6). A black toner or pigment of this type necessarily has a very simple absorption spectrum, providing uniformly low reflectance across the visible spectrum. As such, it does not exhibit a complex spectrum as now required by claims 1 and 17 and is thus entirely unsuited for use as a dopant in accordance with the present invention.

Note also that the complex absorption spectra of the dopants of the present invention are specifically intended to be easily distinguishable from the absorption spectra of printing inks or the like (page 4, lines 17-21; page 5, lines 12-16), such as the toner or pigment of Ziolo.

Ziolo refers only in passing to security printing, among numerous other applications (col. 7, line 64), does not elaborate on the usefulness of the product in security printing, and does not refer at all to *covert* security features.

Accordingly, it is submitted that claim 17 is clearly novel and, in addition, non-obvious in light of Ziolo, since Ziolo fails to suggest a complex absorption spectrum.

Claims 1-3, 11, 13, 16, and 17 were rejected as anticipated by U.S. patent 6,114,077 (Voets). Applicant traverses this rejection. Voets teaches a white toner composition based on titanium dioxide. A white toner of the type disclosed in Voets necessarily has a very simple absorption spectrum, providing uniformly high reflectance across the visible spectrum. As such, it does not exhibit a complex spectrum, as now required by independent claims 1 and 17 (and, therefore, as required by the claims that depend from claim 1) and is thus entirely unsuited for use as a dopant in accordance with the present invention. Note again that the complex absorption spectra of the dopants of the present invention are specifically intended to be easily

distinguishable from the absorption spectra of printing inks or the like (page 4, lines 17-21; page 5, lines 12-16), such as the toner of Voets.

Insofar as Voets is concerned with security printing, it is primarily concerned with features that fluoresce under UV-light (see col. 4, line 66 - col. 5, line 14; col. 6, line 50 - col. 7, line 10). The present claims specifically require that there be no UV, visible, or IR stimulated output. Voets also refers to a non-fluorescent security feature in the form of a kind of "watermark" (col. 5, lines 16-38; col. 7, lines 12-43). Such a feature is clearly an *overt* feature (see page 2, lines 2-3 of the present description) and not a *covert* feature as required by the present claims.

Accordingly, claims 1 and 17 are clearly novel and non-obvious in light of Voets, and are allowable over Voets. Claims 2-3, 11, 13, and 16, which depend from claim 1, are likewise novel and non-obvious, and are allowable for the same reasons.

Claims 17-19 were rejected as anticipated by U.S. patent 3,951,672 (Langley). Langley discloses a glass frit containing lead ruthenate or lead iridate and a method of producing same, for use in thick film resistive elements. The frit is formed by mixing silica and lead oxide together with ruthenium dioxide and/or iridium dioxide, and heating to from a glass containing lead ruthenate and/or lead iridate. The resulting glass is micronized for use in a resistor paste composition. There is no reason to assume that the glass frit taught by Langley would have a complex absorption spectrum as now required by claims 17 and 19, and thus there is no reason to assume that the glass frit taught by Langley would be suitable for use as a dopant in providing a covert security feature as required by claims 17 and 19.

Further, lead has been deleted from the lists of elements in claims 17 and 19, making claims 17 and 19 clearly novel over Langley. There is no basis for assuming that claims 17 and 19, excluding lead from their lists of elements, are obvious in light of Langley. There would be no reason to substitute any of the remaining elements listed in claims 17 and 19 for lead in the teaching provided by Langley. Lead is clearly an essential element of the frit taught by Langley, as evidenced by the title, abstract, description and claims. Moreover, Langley clearly belongs to a non-analogous art. Thick film resistor frits are used in electronic circuits and not for printing covert security features on documents. One skilled in the art of security printing on documents would not look to ways of making electronic components when considering problems in the

security printing art. Accordingly, claims 17-19 are not only novel, but also are non-obvious in view of Langley, and are allowable over Langley.

Claims 1-3, 6, 10, 12, 13, and 16 were rejected as obvious over Ziolo. As already noted, Ziolo refers only in passing to security printing, among numerous other applications (col. 7, line 64) and does not refer at all to *covert* security features. Therefore, there is no reason to assume that one skilled in the security printing art would turn to Ziolo, which teaches a ferric oxide product providing a black toner or pigment (col. 1, lines 43-48, col. 5, lines 4-6), for a teaching of printing black toner as a covert feature. Moreover, a black toner or pigment of the type described in Ziolo necessarily has a very simple absorption spectrum, providing uniformly low reflectance across the visible spectrum. As such, it does not exhibit a complex spectrum as now required by claims 1 and 17, and is thus entirely unsuited for use as a dopant in accordance with the present invention.

Note also that the complex absorption spectra of the dopants of the present invention are specifically intended to be easily distinguishable from the absorption spectra of printing inks or the like (page 4, lines 17-21; page 5, lines 12-16), such as the toner or pigment of Ziolo. To that extent, printing a black pigment, which has a uniformly low reflectance across the visible spectrum, would not render obvious a dopant that exhibits a complex absorption spectrum easily distinguishable from the absorption spectra of printing inks. Claims 1-3, 6, 10, 13, and 16 are not obvious in view of Ziolo and are patentable over Ziolo.

New claim 20 combines existing claims 1 and 7. New claim 20 is believed to be novel and non-obvious since none of the prior art of record teaches a method of providing a security document as defined in claim 1 in which the dopant is fused in a glass as defined in claim 7.

New claim 21 combines existing claims 1 and 12, indicated as being allowable in part 10 of the action.

In respect to the issues raised under 35 U.S.C. § 112, the Examiner appears to be referring to the versions of claims 7 and 19 as presented in the original response to the first office action, and not as presented in the substitute response mailed to the Office on July 2, 2003. The claims in the substitute response do not contain the matters objected to by the Examiner. In any event, the presentation of claims 7 and 19 are deemed to overcome the § 112 issues.

Applicant respectfully submits that the pending claims are in condition for allowance, and requests that allowance of all claims be granted at the earliest date possible.

Should the Examiner have any questions or comments regarding Applicant's amendments or response, the Examiner is asked to contact Applicant's undersigned representative at (215) 988-3309.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0573.

Respectfully submitted,

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